The Citrus Industry

Vol. 25 — No. 8 AUGUST 1944 15 Cents A Copy

FREE PUBLIC LIBRARY
JACKSONVILLE, FLORIDA

FROZEN ORANGE JUICE CONCENTRATES

The Atlantic Coast Line Bulletin, issued periodically in the interest of the agricultural and horticultural industries of the territory served by the line, calls attention to the research made into the feasibility of producing frozen orange concentrates in commercial quantities.

Research on an extensive scale and commercial production to a limited degree is now under way in Orlando by Malcolm Laboratories, Inc., and Florida Fruit Products, Inc. Dr. A. L. Stahl, Associate Horticulturist with the Florida Agricultural Experiment Station at Gainesville, recently described successful laboratory experiments in which citrus juices were concentrated by freezing and centrifuging.

In pilot plants recently installed, the Orlando concerns plan to refine and perfect application of the process to large scale commercial production. Due to the fact that operations were started so late in the season, no large quantity production is expected before another season. However, it is planned to produce a sufficient quantity of frozen orange juice concentrate to make a test of its merchantability this summer.

The first sales test of the new product is to be carried out with the co-operation of a large chain drug store, which will use it in making orange juice for fountain customers. It is said that all the fountain clerk needs to do to restore the frozen 3-to-1 concentrate to full strength orange juice is to add water. The frozen concentrate cools the drink, eliminating the problem of juice extraction and waste disposal.

The Florida Citrus Commission, it is said, plans to check results of the test to determine the feasibility of marketing more Florida oranges in this manner. Efforts to increase the demand for orange drinks at fountains have long been under way. The industry and trade will watch this experiment with interest, in the hope that a practical solution of the fountain problem may be solved.

GOOD TIME TO BUY FERTILIZER

The Southern Agriculturist for July contains some sound advice to the farmers and growers who are users of commercial fertilizers. Among other things, the Southern Agriculturist says:

"Because fertilizer is cheap today in relation to the prices of farm products, now is the time to buy in large quantities. The demands made on the soil of America by the wartime need for more food and more feed has had a depleting effect on the fertility of the land. It is the part of wisdom to prepare for the inevitable lowering of farm prices when the present abnormal demand for food slacks off. The one who looks ahead will have cut his production costs to the point where he can stand a period of low prices. The purchase and application of fertiilzer during the next year or two is one of the safest investments the grower can make."

The suggestions contained in the above are quite as applicable to the Florida citrus grower as to the cotton planter, the general farmer or the truck farmer. With fertilizer prices as they are today, now is a good time to buy heavily.

THE OUTLOOK

The season just closing has been one of material profit to Florida citrus growers. Prices for the most part have been satisfactory, distribution has been well handled, labor while inadequate, has been better than expected early in the season.

What of the future? We cannot expect a continuance of the past season situation under peacetime conditions. With government and lend-lease purchases discontinued, there will naturally be a slump in demand and a lowering of prices. However, many people who heretofore have never been regular consumers of citrus fruits have now acquired the habit, and the demand from this quarter may be expected to continue to the extent of purchasing power.

So, while it would be unwise to anticipate a continuance of present season prices, we believe that the citrus growers of Florida may look forward to an ever increasing civilian demand for their products.

PLAN AHEAD

BUY Armour's BIG CROP FERTILIZERS NOW

It may be several weeks before you actually begin applying Armour's BIG CROP Fertilizers in your groves. Nevertheless, it's a wise move to see your Armour Agent at once, order now and take delivery as the fertilizer is ready. In this way you help to relieve the strain of crowded transportation, manufacturing and storage facilities. And you help other growers, as well as yourself, to obtain an adequate supply of fertilizer.

Armour's BIG CROP has proved dependable, season after season, because it's made especially for Florida crops and soils, manufactured here in the state and used consistently by thousands of successful growers. Make Every Acre Do Its Best — order your requirements of Armour's BIG CROP Fertilizers and take delivery now!

ARMOUR
FERTILIZER WORKS

JACKSONVILLE, FLORIDA

Trends In The Processing Of Florida Citrus Fruit

By ROBT. C. EVANS, Secy.-Mgr. Florida Citrus Commission, Lakeland, At Meeting Florida State Horticultural Society

And Their Influences On Returns To Producers

Recently I received a letter from one of the officials of a large citrus cooperative in California in which three questions were asked relating to citrus processing operations in Florida in the past and in the post-war period. I think that they are truly "sixty-four dollar" questions. And they are questions that our neighbors should not have to ask us — they are questions that we should have long ago and should today be asking ourselves and seeking the answers. Yet, I doubt that many of us have done much serious thinking concerning the answers.

The questions were as follows:

1. Will the amount of canned citrus juices and canned citrus sections (including both oranges and grapefruit) continue to increase? Will the increase, if any, absorb a larger percentage of the total production than in the past?

2. What has been the effect of canned juices and sections on the fresh fruit market with reference to **prices** and **volume of sales?**

3. During the post-war period when the Government is no longer a purchaser or at least a small factor, will the returns to producers for their entire citrus crop be greater or less because of canning outlets?

I am going to discuss with you today my own views on these questions. There probably will be few who will agree with all of my conclusions some of which are supported by little or no concrete evidence. I hope that you don't agree with me entirely because the more we disagree on the answers the more we are likely to carry on discussion and research to determine the true facts. Therefore, my remarks today are intended to provide a basis for further discussion and study by those who may be interested. Now, to get on with the questions.

First question: Will the amount of canned citrus juices and canned citrus sections (including both oranges and grapefruit) continue to increase? Will the increase, if any, absorb a larger percentage of the total production than in the past?

We are of the opinion that the amount of all canned citrus juices and canned grapefruit sections (including frozen sections) will continue to increase. The rate of increase will depend on a number of factors, particularly the increase in production and improvement in palatability or greater consumer acceptance of the products.

Grapefruit

Same of the Florida canners are quick-freezing a small volume of grapefruit sections this year on an experimental basis. We understand the Birdseye people have worked on this idea for several years and claim they have overcome most of the problems that are usually encountered. The sections are being packed in one pound packages and we understand the product is receiving very favorable consumer acceptance. During the war we have been unable to pack all the sections needed for our armed forces because of labor conditions, and no supplies have been available to civilians. We have also had to forego supplying the export outlets which prior to the war were absorbing in excess of one million cases per year. It is difficult to predict what changes, if any, there will be in consumer reception of this product when production for civilian consumption is resumed, but we believe that the combined volume of canned and frozen sections will exceed the volume packed before the war. We are particularly optimistic about the possibilities of frozen sections as leaders in the food industry are predicting an enormous increase in the demand for frozen products after the war.

Last year about two-thirds of our grapefruit crop was utilized by canners. Most of the pack was grapefruit juice. The pack of this product exceeds the packs of all other citrus juices and sections combined. The production of grapefruit this year is expected to be about the same as last year and canners will again use approximately two-thirds.

I have before me a table (Table I) showing the production and disposition of Florida grapefruit and oranges from 1936-37 to 1942-43 and our estimates for 1943-44. This clearly indicates that the quantity of grapefruit disposed of in commercial fresh fruit outlets has remained more or less stationary. There have been some variations from year to year but they have not been in proportion to increases and decreases in production.

For example, in 1936-37 when production was 18,100,000 boxes we shipped 9,654,000 boxes in fresh fruit channels. In 1942-43 when production was 27,300,000 boxes we shipped 8,779,000 boxes in fresh form. Thus, production increased about 50 percent, but the volume of fruit shipped in fresh form decreased about 9 percent. During this 7 year period production ranged from 15,900,000 to 27,300,000 boxes, and fresh shipments ranged from 6,416,000 to 10,661,000 boxes. Including the estimate for this season, the quantity shipped in fresh form during the past four years has been fairly constant, ranging from 7,500,000 to 8,900,000 boxes. To put it another way, if we include estimates for this year, the combined production in the past 3 years has been 10 million boxes more than in the preceding 3 years, but fresh shipments have been 2 million boxes less.

Although fresh fruit shipments have remained fairly constant, there has been quite a change in the percentages that the seeded and seedless varieties comprise of the total fresh shipments. In 1936-37 fresh shipments of seeded grapefruit amounted to almost 6,000,000 boxes and seedless amounted to 3,715,000 boxes. In 1942-43 production had increased 50 percent, but shipments of seeded fruit had decreased to 3,495,000 boxes and seedless had increased to 5,284,000 boxes.

A look at the past two seasons will clearly indicate the trend in the processing of grapefruit. In 1941-42 when production was 19,200,000 boxes, 9,751,000 boxes were processed. In 1942-43 when production was 27,300,000 boxes, 17,567,000 boxes were processed. This was an increase in **one** year of almost 90 percent in the volume of grapefruit processed.

Prices have been relatively high during the past two years, but even when prices were extremely low consumers apparently were not interested in using much more grapefruit in fresh form. During the three year period 1941-42 - 1943-44 national income has been at record high levels and production of grapefruit, particularly for the past two years, has been very high. These conditions were ideal for increasing the volume of grapefruit marketed in fresh form if consumers were willing to use more in fresh form; but they did not use it. Processors have been using an increasingly larger volume for several years. In view of these facts, we are forced to conclude that any further increase in the production of grapefruit will be largely absorbed in processing channels. This, in turn, means that the amount of canned grapefruit juice and other products is expected to increase and

(Continued on page 6)

Citrus Shipments To July 29 Total 44,164,135 Boxes

Winter Haven, —(Special)— A decrease of 39.6 per cent in citrus fruit shipments for the week of July 22-28 as against the preceding period of July 15-21 was noted by the state citrus inspection bureau on July 29th when it issued the final full week's shipping summary for the 1943-44 season. Movements for the week were 32,328 boxes; the equivalent of 80.8 cars of 400-box capacity as compared with 53,552 boxes, or 133.9 cars, for the preceding seven-day period.

The volume included 6346 boxes, or 15.9 cars of grapefruit and 25,982 boxes, or 64.9 cars of oranges, a decrease of 56 per cent in the former from 14,583 boxes, 36.5 cars, and of 33 per cent in the latter from the 38,969, 97.4 cars, of the preceding week. The previous week's orange figures included 40 boxes of tangerines, but no shipments of this kind of fruit appeared in the volume of the week closing July 29.

The heaviest days of the week of July 29 showed reports from five of the state bureau's 17 districts, the other days only three districts being listed. Most of the fruit moved came from the Winter Garden district (No. 16) in Orange county, with a fair volume from the Haines City (No. 10) and Lakeland (No. 8) districts of Polk county. The Miami-Ft. Lauderdale district (No. 1) gave a composite report twice during the week and the Winter Haven (No. 9) district had light movements on Friday.

The seasonal total shipments through July 28 stood at 44,364,134 boxes, equivalent to 110,910.3 cars, with grapefruit at 9,173,055 boxes, oranges at 32,170,223, and tangerines at 3,820,856 boxes. The total is more than four and a quarter million boxes above shipments through mid-July in 1943, when the daily reports were closed for the season.

The

X-CEL

Brand

Is a symbol of integrity!

We have served Florida growers for more than thirty-five years, and have kept faith with our friends and customers. We do not hesitate to blaze the trail that leads to greater efficiency and better production. Only as Florida Growers succeed do we succeed, and we have taken our responsibility seriously.

If you are not already a member, we invite you to join the large group of progressive and successful producers with whom we have been privileged to cooperate throughout the years.

X-CEL FERTILIZERS
X-CEL SEEDS
X-CEL FEEDS
X-CEL INSECTICIDES

Jackson Grain Company

Our 35th Year

Tampa Florida

Your premium coupons are redeemable with WAR SAVINGS STAMPS

The Citrus Industry
EXCLUSIVE SPECIALIZED CITRUS PUBLICATION
Issued Monthly
Representative of every interest
Representing no special interest

Publication office at Bartow, Florida. Entered as second class matter February 16, 1920, at the post office at Tampa, Florida, under the act of March 3, 1879. Entered as second class matter June 19, 1933, at the post office at Bartow, Florida, under act of March 3, 1879.

The Role Of The Experiment Station In Agricultural Progress

By HAROLD MOWRY, Director, Fla. Agri. Exp. Station, Gainesville, At Meeting Florida State Horticultural Society

Agriculture, like all other forms of human endeavor, can advance no further than the limits of today's knowledge. For its maintenance, modernization, reconstruction and expansion in all of its many phases, the constant development, application and use of agricultural science is a necessity. The role of an experiment station is to supply this need through the development, by experimentation and research, of new knowledge that will make possible the betterment and advancement of agriculture and all rural life.

It is in agriculture that we probably have the World's first and oldest form of progress and ascent from aboriginal savagery. When man first learned to plant seeds he began the long trek separating himself from the ways of the wild animal and leading toward civilization. Until man could assure himself of an ample food supply, much in the way of development in other lines was not possible. But with the knowledge gained in the seasonal planting of crops, crude storage of produce, and domestication of some of the wild animals, advancement then seems to have ceased or remained materially unchanged over a long period of centuries. Domesticated animals and cultivated plants were comparatively small and undeveloped and a far cry from the improved breeds and varieties of the present day. There was always the fear of famine through failure of crops or the scourge of insect pests or diseases. Even as late as the 1860's leading men of the time stated conclusively that the world population must soon level off or starve because of the limitations of food supply. Despite those dire predictions, the top population figures set have nearly been doubled and we still eat (even if on a temporarily rationed basis!)

Little was it thought 150 years ago, when in America 19 farm families were required to produce surplus food enough to feed one urban family, that today the ratio would be 4 farm families to 20 non-farm families. Thus in productive advancement, American agriculture has held its own with American industry.

The achievement of the present high plane of agricultural production was made possible only through the utilization of the findings of research. Contributing heavily are new and improved machinery, new power sources, improvement and adaptation of breeds and varieties, better cultural methods, a new conception of plant and animal nutrition, new knowledge of diseases and insects and improved methods and materials for their control, improved packaging, transportation, preservation and storage methods — in short, the adaptation of the findings of physical, chemical, biological and other sciences to the needs of agriculture.

Experimental work in agriculture had its inception on a definite basis just 100 years ago with the founding of the Rothamstead Experiment Station in England. Some 7 years later experimental plots were set up in Saxony, and in America during the period 1940-1875 some 15 states carried on limited agricultural experimental work. The present U. S. Department of Agriculture was not organized until 1862.

The Morrill Act of 1863 established the Land-Grant College system of Agricultural and Mechanical Colleges and laid the foundation for the majority of the present State Universities or A and M Colleges. Some 24 years later, in 1887, in response to the need for the development of factual agricultural information, the Hatch Act was passed. This Act created an agricultural experiment station in each of the several states and granted to each an annual endowment of $15,000. Most of these stations are integral parts of the respective State Land-Grant Colleges.

In Florida, the Agricultural Experiment Station was established in 1888 as a part of the Agricultural College then located in Lake City. With the passage of the Buckman Act in 1905, the Station by law became a department of the University of Florida at Gainesville and is now one of the three divisions of the College of Agriculture. Certainly no one of the stations faced more complex and difficult problems than did Florida's. The soils were not known and generally not noted for their natural fertility; climatic influences were not congenial to many crops of more northern areas; the cattle tick and nutritional deficiencies (the cause then unknown) militated against improvement in livestock production; and the knowledge for the adequate control of most insect pests and diseases had yet to be developed. No area in the country had a comparable situation

(Continued on page 8)

TRENDS IN THE PROCESSING OF FLORIDA CITRUS FRUITS AND THEIR INFLUENCE ON RETURNS TO PRODUCERS

(Continued from page 3)

this increase will absorb a larger percentage of the increased production that is expected in the future.

Oranges

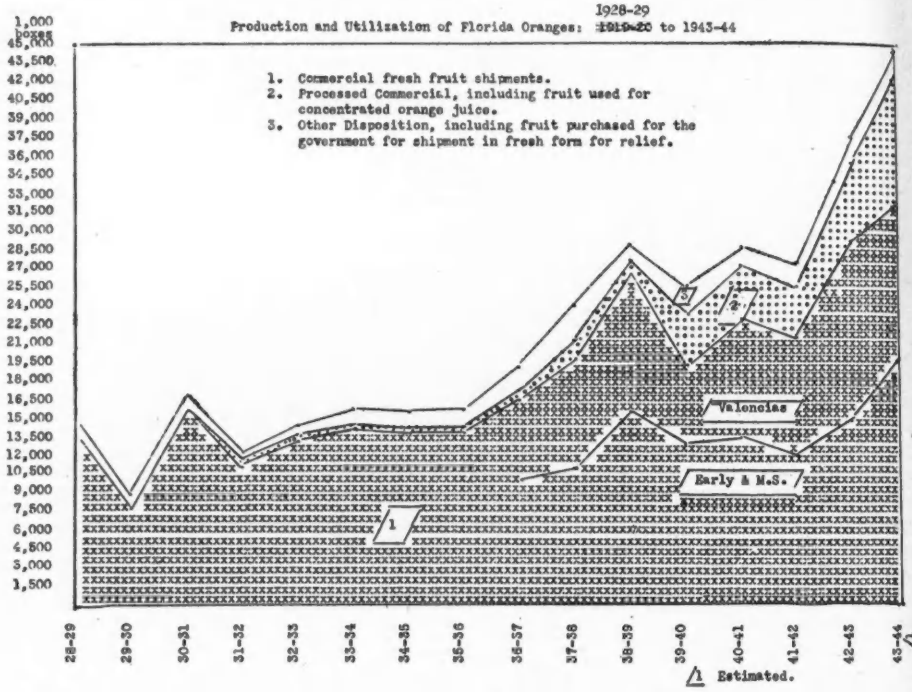
Now, let's take a look at oranges. The picture here is somewhat different. There have been great fluctuations in the quantity shipped in fresh form. The fluctuations are closely related to the changes in production. The quantity processed has not increased at nearly as rapid a rate as in the case of grapefruit. During the past 7 years production ranged from 19,100,000 boxes in 1936-37 to 37,200,000 boxes in 1942-43. Fresh commercial shipments ranged from 16,722,000 boxes in 1936-37 to 28,988,000 boxes in 1942-43. In this 7 year period production increased 95 percent and fresh fruit shipments increased 74 percent. We believe production this year will reach 45,000,000 boxes and fresh shipments will approach 34 million boxes.

The quantity processed ranged from 622,000 boxes in 1936-37 to 6,285,000 boxes last year. However, it must be remembered that the quantity processed last year included 2,800,000 boxes which were used for the production of concentrated orange juice for the government. For the current year we estimate 9,000,000 boxes of orange juice will be processed of which approximately 2,250,000 boxes will be used for concentrated orange juice. This product was not produced in Florida except on a small scale prior to the war.

The quantity of oranges processed last year cannot be considered in the normal trend because the use of tin for packing orange and blended juice was restricted. This year, however, tin for packing these products is unrestricted and the packs are expected to greatly exceed those of any previous year. The announcement of unrestricted tin was not made until about the middle of February when our season was well under way. However, the quantity of orange and blended juice packed probably will not be much, if any, less than it would have been had the announcement been made at the beginning of the season.

It is estimated that approximately 6,750,000 boxes of oranges will be utilized this year in the production of orange and blended juice. This compares with 3,485,000 boxes used last year in the production of these products. The pack of canned blended juice increased from 1,403,000 cases in 1939-40 to 3,676,000 cases in 1942-43. It is estimated that 5,300,000 cases will be packed this year. In the case of canned orange juice, the pack in 1939-40 was 2,851,000 cases compared with 2,420,000 cases in 1942-43 when tin was restricted. It is estimated the pack this season will be 5,000,000 cases.

If we are to judge by the quantity consumed, canned orange juice has been meeting with increased consumer approval each year; however, the increase in the volume packed each year has not been very large. The increased use of oranges by processors, exclusive of the volume used for the production of concentrated orange juice, has been due in a large measure to favorable consumer acceptance of blended juice, particularly during the past three years. (See Table II).



On the basis of estimated utilization for this season, the volume of oranges used for producing orange and blended juice will be substantially increased and will represent a larger percentage of the crop than was used in producing these products during the past two or three years.

We do not know, of course, what our position would be on oranges today if we had not entered the war. We are of the opinion however that there will be substantial increases in the percentage of the production used for processing. The housewife is generally becoming more and more allergic to preparing foodstuffs regardless of how little effort is involved. A large percentage of Florida oranges purchased by consumers in fresh form are used for juice purposes. We feel that the reason the housewife continues to buy oranges in fresh form for juice purposes is because the canned juice does not approach closely enough the fresh juice; it does not have the flavor or palatability required to increase the demand. It is true that the pack of canned orange juice this year will be much larger than in past years, but we believe this is largely due to the fact that canned orange and blended juices were not available to civilians last year, and supplies of other juices are not plentiful this year.

If an improvement in the technique of canning orange juice should be developed so that the canned juice approached the fresh orange juice as closely as canned grapefruit juice approaches fresh grapefruit, we think it is entirely possible that within a period of three to five years from one-third to one-half of the Florida orange production would be utilized by processors. There has been much experimental work done on powdered orange juice, concentrated orange juice and single strength canned orange juice. We believe that improvements in processing techniques are bound to come and with it a quick shift from fresh use to the use of processed products. These improvements **must** come because it is extremely doubtful that we can continue to dispose of our increased production of oranges in fresh fruit channels at a reasonable return to the producer.

There has been considerable discussion as to whether we will have a market after the war for the type of concentrated orange juice presently being produced for the government in Florida and California. The Florida Citrus Commission has been working with the industry with the view of developing a market in Great Britain where the current production is being shipped. This may be possible. We doubt however that a domestic market can be developed for any appreciable quantity of this product as it is now produced. As in the case of our canned orange juice, the flavor of the con-

centrate is not such as to command consumer acceptance similar to that we enjoy for canned grapefruit juice. Therefore, all our efforts should be bent towards developing products that will meet with more ready consumer acceptance.

To summarize our comments on oranges, we believe the amounts of canned orange and blended juice will increase and that such increases will represent larger percentages of the production, but this latter belief is based upon the assumption that improved techniques for canning orange juice will be developed, or that the product will be processed in some form that will receive greater consumer acceptance. We believe this will be done. If such improvements are not forthcoming there may not be an appreciable increase in the quantity of oranges processed in the future. At least, any increase in the absence of improvements is likely to be very gradual.

Second question: What has been the effect of canned juices and sections on the fresh fruit market with reference to prices and volume of sales?

Grapefruit

In the case of grapefruit, we believe that when most of the canners are operating the prices they pay greatly influence or, perhaps we should say, largely govern the maximum returns that may be received for fruit shipped in fresh form. This does not apply to high quality Indian River fruit or other fruit of comparable quality. During the past several years there has been a rather close balance between prices for grapefruit shipped in fresh form and supplies sold to canners, especially from about January 1 to May 1 which is the period of peak canning operations. Since all except the lowest quality grapefruit is available for shipment in fresh form in the event there is a demand for it at a price higher than the price paid by canners, the market for fresh grapefruit has little opportunity to consistently return higher prices to growers than prices paid by canners. This is particularly true of the seeded variety and the medium to lower grades and less desirable sizes of the seedless variety.

Although complete price information is not available, we are of the opinion that the seasonal average price paid by canners for grapefruit returns more to growers than the seasonal average price for all Florida **seeded** grapefruit shipped in fresh fruit channels. The on-tree price equivalents in 1942-43, as reported by the Bureau of Agricultural Economics, were 92 cents per box for all Florida grapefruit sold to canners and $1.08 per box for all fruit shipped in fresh form. On the basis of auction sales, the returns for seeded grapefruit that season were about 60 cents per box lower than returns for seedless grapefruit. Since about one-third of the total shipments of grapefruit were sold at auction and the returns for seedless grapefruit are reflected in the B. A. E. on-tree price of $1.08, there can be little doubt that the average returns from sales to canners last season were higher than the average returns from sales of **seeded** grapefruit shipped in fresh form. Canners prefer the seeded fruit for juice and often pay a premium for this variety. All grapefruit sections are produced from the seeded fruit. The seeded variety comprises about 60 percent of our production of grapefruit, and in 1942-43 almost 80 percent of the production of this variety was utilized by canners.

While the price paid by canners acts somewhat as a ceiling it does not operate as a floor on returns for grapefruit shipped in fresh form. As we have stated, the returns for grapefruit shipped in fresh form are often lower than they would have been if the fruit had been sold to canners. This may be partly explained as follows: Some packing house managers frequently ship grapefruit to fresh fruit outlets when it is almost a certainty that the net returns from such fruit will be less than they would if the fruit were sold to a canner at prevailing prices for canning fruit. This is particularly true of seeded grapefruit and the lower grades and less desirable sizes of seedless grapefruit. This contention would seem to be borne out by the point which we have made that the average price paid by canners for grapefruit last year returned more to growers than the average price for seeded grapefruit shipped in fresh form.

In order to show a low unit handling or packing cost and thereby remain on a competitive basis with other packers, a certain minimum quantity of fruit must be handled through the packing house. The manager therefore is often faced with the question of whether he should (1) close his packing house and sell all fruit to canners, (2) operate the packing house on an uneconomical basis with a small volume of fruit and sell the bulk of his fruit to canners, or (3) handle sufficient fruit through the house to insure an economical operation even though returns from some of the fruit are almost certain to be less than if sold to canners. The latter course is generally followed.

The growers and shippers who operate the packing houses do not want to depend on canners entirely as an outlet for fruit and they generally feel that they must continue to supply their fresh fruit trade with supplies despite the fact that returns on a substantial part of the fruit so handled may be lower than if it were sold to canners.

(Continued on page 14)

TABLE 1.—Production and Disposition of Florida Grapefruit and Oranges 1936-37 to 1943-44

Year	Processed /1 Commercial (1)	Pct.	Purchased by and Processed for Govt. (2)	Commercial Fresh Shipments (3)	Pct.	Purchased by Govt. for Fresh Shipment (4)	Other Disposition (5)	Total Production (6)
	1,000 boxes							
GRAPEFRUIT								
1936-37	6,687	36.9	36	9,654	53.3	925	798	18,100
1937-38	6,052	41.4	105	7,750	53.1		693	14,600
1938-39	8,493	36.4	740	10,661	45.7	908	2,498	23,300
1939-40	8,804	55.4		6,416	40.3		680	15,900
1940-41	13,274	53.9	602	8,902	36.2	971	851	24,600
1941-42	9,751	50.8	396	7,477	38.9	761	815	19,200
1942-43	17,567	64.3		8,779	32.1		954	27,300
1943-44/5	18,800	68.1		8,000	29.0		800	27,600
ORANGES								
1936-37	622	3.3		16,722	87.5		1,756	19,100
1937-38	1,253	5.2		19,920	83.3	825	1,902	23,900
1938-39	1,187	4.0		26,599	88.9	209	1,905	29,900
1939-40	4,200	16.4		19,158	74.8	859	1,383	25,600
1940-41	3,949/2	13.8		23,145	80.9		1,506	28,600
1941-42	4,022	14.8		21,403	78.7		1,775	27,200
1942-43	6,285/3	16.9		28,988	77.9		1,927	37,200
1943-44/5	9,000/4	20.0		34,000	75.5		2,000	45,000

/1 Does not include grapefruit processed for account of government shown in column (2). Does include grapefruit canned for commercial use, but later purchased by government from canners stocks for relief and other purposes.
/2 Includes 112,000 boxes used for producing concentrated orange juice.
/3 Includes 2,800,000 boxes used for production of concentrated orange juice.
/4 Includes 2,250,000 boxes estimated to be used for production of concentrated orange juice.
/5 Estimated.
Source: Compiled from reports of Florida Citrus Commission, Growers Administrative Committee, and "Annual Statistics Relating to Bearing Acreage, Production and Disposition of United States Oranges and Grapefruit", issued May 1941, by Surplus Marketing Administration, U. S. Dept. of Agriculture, Washington, D. C.

THE ROLE OF THE EXPERIMENT STATION IN AGRICULTURAL PROGRESS

(Continued from page 5)

and the findings of other Stations had little or no direct application.

That condition of isolation of Florida's agriculture holds as true today and it is now well recognized that most of our problems are our own and that we alone must cope with their solution. At the same time we are recognizing that these differences in environmental conditions are assets as well as liabilities and that possibilities of production are offered that do not exist elsewhere in the continental United States. Thus we have the opportunity of building to our advantage an agriculture in large measure different from and only slightly competitive with that of most other states.

The wide variation in the State's soils, crops and weather extremes has made necessary the dispersion of experimental work to those widely scattered areas and regions where specific crops and their cultural problems are centered. It is obvious that research in the growing of tropical or subtropical fruits cannot be conducted in north or west Florida, that tender vegetables cannot be produced during the winter at Gainesville and that cultural conditions of the Everglades are not similar to those of the mineral soils areas. To meet the pressing area or crop problems five branch stations and six field laboratories have been established, each dealing with general or specific problems of the area and type of agriculture where located. While each of these branch stations operates as a distinct unit with its own scientific staff, all are an integral part of the Florida Agricultural Experiment Station system with their work coordinated through the Main Station at Gainesville.

No part of the state nor any of its numerous agricultural activities has been ignored and the results of station research are apparent from Dade to Escambia counties. All in the citrus belt are aware of the advancements made in citrus nutrition and cultural practices within the past decade. Without fear of contradiction it may be said that Florida has far outstripped other areas in minor element findings and use. These elements, from one to several in combination, are utilized to marked advantage on tree, field, pasture and vegetable crops as well as ornamentals. Definite deficiency symptoms and application rates and methods have been determined for one or more of the six elements — copper, zinc, manganese, magnesium, boron and iron — on citrus, tung, corn, avocados, mangos, celery, beans, tomatoes, potatoes, pasture lands and numerous ornamentals. Few crops would be grown in the Everglades soils without copper. In the field of animal nutrition the use of minerals has resulted in the prevention of "salt sick" and other widespread nutritional difficulties. Some idea of the magnitude of Florida application is available from the approximate annual consumption of two of them: zinc sulfate, 5,000 tons and manganese sulfate, 14,000 tons. The latter represents some 70 percent of the agricultural usage of manganese in the United States.

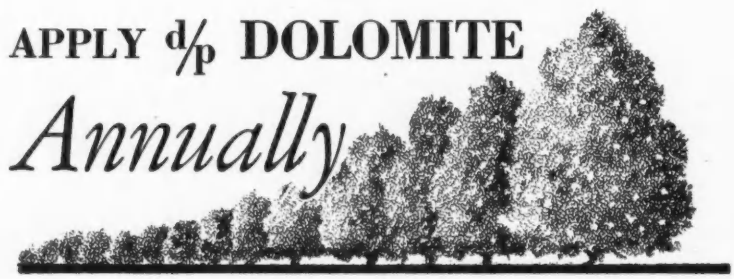
Instances of crop improvement are many and varied, including introduction of new grasses and clovers and development of needed methods of management and fertilization. At the Range Cattle Station almost startling results were obtained from minor elements whereby a seeding of carpet grass made in 5 months a growth equivalent to that normally requiring 2 years.

A listing of applied findings is far too long to be given here in its entirety, but a few examples will demonstrate the part research has had in the progress, improvement and readjustment of the State's agriculture:

Hybrid and Dent Corns. None of the hybrid corns of the midwest corn belt or other areas are of worth in Florida. The hybrid FW-1 was developed and its use has increased yields more than 40 percent. Two new dent corns outyielded the older varieties, and these three now comprise a large portion of the corn acreage. In the Everglades, a selection of a new corn from Puerto Rico produced two crops in one year from the same plot for a total yield of 150 bushels per acre.

Tobacco: The existence of the shade tobacco industry was gravely threatened by a disease called "black shank." A new variety was bred that is not only practically immune to the disease but of better quality than the old varieties. The whole of the acreage is now planted to station varieties. Cultural methods for flue-cured varieties have been improved and very satisfactory controls for "blue mold," a serious seedbed disease, have been adapted.

Oats. A decade ago so few oats, as grain, were produced in Florida that the totals were practically nothing. Even for winter pasturage oats were not highly satisfactory because of disease. Florida was considered definitely as not adapted to oat growing. Breeding and selection have decidedly changed the condition, with grain yields now exceeding 40 bushels per acre not uncommon. Some 4 or 5 new rust-and smut-resistant varieties, some adapted to the better soils of western areas and others to the the sandier soils of the north central region, have been responsible, together with cover crop seed harvesting, for the utiliza-



Don't Lose the Benefits You've Gained! . . .

Dolomite is a superior, long-lasting conditioner which restores acid-alkali balance in the soil, releases "locked-up" plant food and supplies the essential magnesium and calcium your trees need. But even Dolomite will leach from the soil in time.

One application a year is sufficient to keep your groves in shape once you have restored the soil to top producing condition. *But be sure to make this annual application!* Otherwise you'll lose what you've gained, and it will cost you more to restore soil balance.

d/p DOLOMITE Products, Inc. OCALA, FLORIDA

Buy War Bonds

tion of some 100 combines in the State where there were only 2 or 3 seven years ago. This year the oat plantings for grain and pasturage have been estimated at over 60,000 acres.

Cover Crops. Three of the major cover crops — lupines, crotalarias, and velvet beans — are station introductions.

Sugar Cane. While no sugar cane is produced in the northern areas, the acreage grown for syrup is large. Old varieties, which became worthless because of the mosaic disease, have been replaced entirely, as have those in the sugar-producing areas, by new ones bred by the Everglades Station and by the U. S. Department of Agriculture.

Tung Oil. The station-introduced crop for the current year in Florida is estimated at 2 3/4 million pounds of oil with a valuation of nearly 1 million dollars. The oil is highly essential in war industry and the whole output is allocated to such purposes.

Grasses and Clovers. Pasturage conditions are being rapidly improved through utilization of new grasses or better methods of culture and management. Through variety adaptation, determination of fertilizer requirements and inoculation improvement, clovers now have a definite place in pasture programs.

Vegetables. Numerous new varieties of vegetables have been tested and introduced, and many new varieties developed by breeding and selection, the latter including chiefly beans, tomatoes and watermelons. Continued improvements have been made in the control of the numerous insects and diseases.

Citrus. No group has a higher appreciation than the membership of this Society of the advancements of the past decade in the culture of citrus. The general appearance of groves has changed materially, production has increased, the fruit quality been improved.

These betterments have been due in the main to:

1. The determination of definite nutritional deficiencies of copper, zinc, magnesium and manganese, and the identification and development of the use of symptoms as to a means of diagnosing nutritional deficiencies and toxicities.
2. The development of adequate information on soil composition in citrus groves as a basis for cultural practices.
3. Correlation by State and Federal agencies of insect, disease and nutritional sprays in an organized program of spraying and dusting.
4. Improved methods and materials in the control of diseases and insect pests.

Storage and Packaging and Processing of Fruits and Vegetables. Extensive information has been developed on optimum storage requirements of citrus and other fruits and vegetables. The new product pliofilm — a rubber hydrochloride — as a wrapper offers such advantage in the preservation of fresh fruits and vegetables that its use may substantially change wrappings and storage practices when it becomes commercially available after the war. A method of dehydration of citrus juices by freezing has been developed that produces a product of quality and may be a means of further market expansion.

Animal Production. All phases of poultry and livestock production reflect improvement through research in feeding and management practices, mineral nutrition requirements, improved breeding, and parasite and disease control. Dried citrus pulp, the feed values of which were determined and demonstrated by station workers, has been of inestimable value in milk production in Florida during the war period, over 40,000 tons being produced annually.

Insect and Disease Control. Apparently we are on the threshold of great advancements in disease and insect control in both animals and plants through the development and application of some of the innumerable new organic compounds. The use of phenothiozine in the control of internal parasites of cattle and sheep, dithiocarbamic acid derivatives in the control of late blight of potatoes, downy mildew of tobacco and cabbage, the so-called DN compound in the control of the purple mite of citrus are examples.

Since the outbreak of the war the resources of all stations have been centered on the development and supplying of facts which would help in the tremendous demand for food, feed and fiber. Despite personnel shortages (nearly 20 percent of the Station's staff are in military service) and inability to obtain adequate labor, supplies and equipment, 175 research projects, the great majority of them directly connected with this effort, are now in active operation. At the several stations between five and six thousand letters of inquiry on agricultural subjects and problems are received monthly, and over 80,000 copies of bulletins, all on request, are distributed annually. To date, 399 bulletins and 598 press bulletins dealing with the many phases and problems of Florida agriculture have been published.

Florida's agricultural production record during the current war is one of which we may well be proud. In general, all produc-

(Continued on Page 12)

USE SPRAYS THAT ARE Effective

FLORIDA VOLCK*
PHYTONOMIC OIL SPRAY

FLORIDA N-P READY MIX*
OIL SPRAY

by test and practical experience ORTHO OIL SPRAYS do the job in the most thorough and economical way.

Ask your ORTHO fieldman for specific recommendations.

SCIENTIFIC ORTHO PEST CONTROL

Distributed By
Naco Fertilizer Co., Jacksonville
Jackson Grain Co., Tampa
Hector Supply Co., Miami

*Reg.U.S.Pat.Off.

California Spray-Chemical Corporation,
Orlando, Florida

Eddie Reports On Lee C

Well, it happened again. Along about the middle of the month the Boss comes to me right in the midst of when I was doing a spell of deep figuring. I was trying to reconcile the relation of a priority to a surtax and also trying to figure out what connection an excess profit tax (if any) had with the price of cheese. And all I had accomplished was to get myself so confused and bewildered that I had even forgotten which way was up.

So when he says. "Well, Eddie, we're going to make another little trip," all I could do was to look at the clock which said 4:30 p. m. I didn't say anything but I wondered if the Boss was going to march me through a lot of citrus groves in the moonlight — also I wondered, if like a good plumber, I was going to get overtime for the portal to portal time we occupied in our transportation to wherever we might be going. I didn't say anything about that though. The Boss has been working sort of regular lately and didn't seem to be in any too good of a humor.

Well anyway we drove to Fort Myers and spent the night there — that is we spent part of the night in the hotel — for the sun was just beginning to come up the next morning when the Boss woke me up and said: "Come on, it's time to go to work." So I got up and then we walked all over town to find a place to get breakfast, but it was so early none of the eating places were open except one all night place where the waiters were just barely awake after their long stretch. But anyway we got breakfast and drove down to the office of the Lee County Packing Company.

Here we met several of the men of the company including G. E. Howerton, the secretary-treasurer-manager. And a few minutes later in came H. C. Case, vice president of the company. We'd been hearing about Mr. Case for years but had never met him. He said the H. in his initials stood for "Hard" but after spending all day with him we knew he was kidding.

After a spell of conversation in which we learned that W. G. Masters was president of the packing company and that this concern handled a large part of the fruit produced in Lee County Mr. Case suggested that we drive around and look at some of the county's groves, so with the Boss and Mr. Case and Mr. Howerton and Bennett Whidden production manager of the company we started out.

Much to the discomfort of Messrs. Howerton and Whidden I was wedged in between them on the back seat and we drove out to what they called the Mansion, which it seems was the huge home on the McDonald Grove which Howerton had recently purchased. It proved to be just what it was named, a mansion. Huge panelled rooms, with built-in- Revolutionary type china cabinets in the dining room, with a butler's pantry and great bed rooms each with its private tiled bath and under it all a huge basement into which the owner could drive his six or seven cars if he had 'em. Mrs. Howerton permitted us to go all through the house, and at the last opened a door into one of these self-operating elevators, which runs from the basement to the third floor.

I wanted to stay at the Mansion all day but the others insisted that we look at the groves which we did and since they all used Superior Extra Value fertilizer it was natural that they were all in swell shape. Loaded with fruit, uniform in foliage and just as pretty as the pictures you see in the magazines. There were the Sunbeam grove, the Flowerree grove, and the Case grove that we visited before lunch.

Mr. Case owns a considerable acreage of grove property himself and is manager of the Flowerree grove and the Flowerree Farms, Inc., at Estero. In addition to which he is a member of Ft. Myers city commission, immediate past president of the Lee County Farm Bureau, of which Mr. Howerton is now president; has served with distinction on the growers and shippers committee, was active in the old Clearing House association and a director of the Citrus Growers Credit Corporation.

It was noted that virtually all the groves in the county are located on the banks of the Caloosahatchee river and Mr. Cas this happened. He said that back of wealthy people used to come to by train, ride to Ft. Myers on o side wheelers which plied the river, and spend their winters a Royal Palm Hotel which still o

EDDIE EXPLA

I've been expecting this eve Boss started giving me a one-d holiday several months ago, an spend it walking through gr is harder work than I do any in the month—

—Anyway last month whe Hardee county while the Boss somewhere else I thought I h everything in the county, but pears that I missed making a of our agents down there wh of our good Superior Extra V Fertilizers than any other of in the whole state of Florida.

These folks who are our presentatives in Hardee count (Pete) Cosey and W. L. W co-owoners of the Hardee C and Crate Co. They are swel are doing a swell job for themselves. I'm sorry, fellow didn't mean to overlook you. that you were so big I sort you. Next time you are in buy you a cigar or sumpin'.

It appears that grapefruit wa in vogue at the time and m wealthy visitors used to save al from the fruit which were serve hotel, and more as a hobby else many of them planted plantings were made along th

SUPERIOR FERTILIZ

Phone Y-1623

G. D. SLOAN, Pres

Factory and Office East Broadway at 4

e County Situation . . .

and Mr. Case told us how
aid that back in 1900 a lot
ed to come to Punta Gorda
. Myers on one of the old
plied the waters of the
eir winters at the big old
which still operates there.

EXPLAINS

cting this ever since the
g me a one-day-a-month
onths ago, and made me
through groves which
an I do any other time

month when I was in
hile the Boss was away
thought I had covered
county, but now it ap-
ed making any mention
wn there who sell more
rior Extra Value Brand
ny other of our dealers
e of Florida.
o are our original re-
Hardee county are A. F.
d W. L. Warren, Jr.,
e Hardee County Seed
ey are swell folks and
l job for us and for
orry, fellows—honest I
erlook you. It was just
big I sort of missed
you are in Tampa I'll
r sumpin'.

EDDIE.

apefruit was just coming
me and many of these
to save all of the seeds
were served them at the
a hobby than anything
planted groves. Their
along the river where

each grove had its own packing house on the bank so that the sidewheelers could pick up the fruit and transport it to Ft. Myers where it was shipped north by train.

Mrs. Flowerree was a Frenchman and a wealthy cattleman from Montana, and he was one of the largest developers.

Mr. Case came to Ft. Myers in 1910 and in 1922 took over the management of the Flowerree properties as well as buying some groves for himself. He is especially proud of the old seedling grapefruit grove through which we walked and which he says bears the finest grapefruit in the world. The trees are huge and carry from 20 boxes up of fruit each year and they certainly looked all he claimed for them.

Mr. Howerton answered my query saying that his company handled something over 325,000 boxes of fruit last season and expect to increase their volume even more this year with their canning plant now able to handle a much larger volume. While the packing company is a corporation he described it as a co-operative corporation and judging from the reputation which it has among the growers of the county it deserves that peculiar title.

Among other groves we visited was the Garvey Brothers grove in which we found the same fine trees and fruit. We observed the Boss justifying the assertion made of him that he was something of a horse trader. While the rest of us were looking at the grove I saw him talking with the grove manager and when he came back to the car he said he'd just bought a small harrow. Seems like one of the Boss' customers had said he wanted one so the Boss bought this one he saw standing by a barn. That's what we call service, sure 'nuf.

Mr. Case told of the frequent floods which used to be a hazard to groves before the present cross state canal took care of drainage and provided transportation at the same time. He said he had seen water from three to eight feet deep standing in many of the groves through which we passed, and that the hurricanes in that area had made citrus growing a very discouraging pursuit in the old days. Of recent years there have been no floods and no disastrous winds. After lunch which we finally got in a place in Ft. Myers which wasn't too crowded to take us, we drove out to Pine Island some 24 miles from town and went through Mr. Masters' grove. It was a beautiful sight, even with a few day-time-working mosquitoes on the job. One 130 acre plot was completely surrounded by a wind break of Australian pines and the grapefruit and oranges both were of the finest texture we've seen anywhere on any of these trips we've made. Mr. Howerton said they were undoubtedly the best grapefruit in all the world. In fact he promised to ship us a box when they were ripe to prove it to us. Mr. Case chimed in and said he would send us a box of his seedlings to demonstrate what really good grapefruit were like.

We hope both gentlemen have good memories.

As we drove through the grove we were startled to see a five-point buck deer jump up out of the grass right in front of our car and beat it off into another section of the grove. Seems like Lee county has everything.

The drainage and irrigation in these groves was provided by artesian wells tied in with lateral ditches and the sight of the Boss working and straining to find the bridges over these ditches with his heavy Buick was something to behold. But he made it in spite of the fact that the rest of us said he should have a light car for such heavy work.

Well we saw the Helena 100-acre grove and like the rest it was a peach, in prime condition and loaded with fruit.

When we got back to town Mr. Case showed us through the enlisted men's club which the city in co-operation with the government has built for the use of the thousands of service men who are in the Ft. Myers area. It topped anything we've seen in Florida.

Well that's about all, except that the enthusiasm of the folks we see on these trips for Superior Fertilizers is just plumb heartening.

EDDIE

ILIZER COMPANY
AN, President
dway at 47th St., Tampa, Florida
P. O. Box 1021

THE ROLE OF THE EXPERIMENT STATION IN AGRICULTURAL PROGRESS

(Continued from Page 9)

tion goals as set by the War Food Administration have been met, the fruit and vegetable output of last season exceeding that of the previous year by some 25 percent. This ability to expand and break all production records was not the result of accident; research results developed during previous years played no small part in that attainment.

All of you are painfully aware of the current shortage of natural rubber, but probably few know of the efforts to determine whether rubber-producing plants could be grown in Florida. Two such plants, cryptostegia and the Russian dandelion, koksaghyz, have shown themselves to be well adapted to parts of the southern areas, the former particularly to the marl soils and the latter to the peats and mucks. In cooperation with the U. S. Department of Agriculture and with the aid of Florida's State Department of Agriculture, plantings of kok-saghyz were made at the Everglades Station and the Belle Glade prison farm. Yields from unselected plants, in 7 months from time of planting, were around 200 pounds of rubber per acre and that from selected plants twice that amount. While it now appears we will not need to convert our food-producing lands to rubber growing, it is of some comfort and satisfaction to know that Florida can produce quality rubber if needed and in greater yield per acre than of any records we have seen for other areas in the United States.

Other new crops under test, cooperatively with the U. S. D. A., show promise for post-war development. Among them are sansevieria and roselle, fiber plants which yield heavily, the former suitable for cordage and the latter as a jute substitute. Apparently a demand is now being created for ramie, an Asiastic fiber plant shown severals years ago to be well adapted to the Everglades.

With the outbreak of war, shortage of supply made necessary government control of allocation and distribution of many materials essential to agricultural production. Among these have been fertilizer materials, some of the fungicides and insecticides, and some of our vitally needed minor elements. Your experiment station has cooperated to the utmost with Federal agencies in placing before them as accurate information as was possible to obtain in order that Florida requirements might have their equal share. In this effort, and others, the work of the Agricultural Division of the State Defense Council, under the able leadership of Mr. L. H. Kramer, and that of the Station has been one of mutual helpfulness and correlated to a most unusual degree. We wish to express publicly our appreciation of Mr. Kramer's and his Division's exceptional cooperation and invaluable service. This combined effort and the fine attitude of Federal officials in charge of allocations has played no small part in making available adequate quantities and needed grades of these various materials during the past two years.

Our present day economy is a war-time economy; we have had a sellers' market with a relatively good demand for nearly everything produced. Conditions of the past two years have shown that the huge surpluses of the depression years are for the most part not surpluses if gotten into the hands of peoples who need them. But what of our produce in the post-war years? Some two-thirds of our crop production is now classed as perishable and is consumed in a fresh or processed condition — mostly fresh. This situation places the producer at the mercy of an almost daily fluctuating market with little or no withholding cushioning possible. In further expansion, emphasis needs be placed on non-perishable products capable of manufacture or synthesis, on those which we produce in insufficient quantity to supply our own need, and on new or seasonable crops adapted to our climate and soils. It is not implied that we should reduce our acreages of perishables; for them ways and means must be found for their wider utilization and distribution which must come partially through development of new and better methods of preservation, processing and transportation, coupled with continued improvement of cultural methods and varieties to insure highest quality at lowered costs of production.

Research achievements of the past have demonstrated the possibilities of the future. Our agricultural progress must of necessity come to a standstill without constant development and application of new knowledge, new methods, new information and new discoveries. Florida has placed in the agricultural experiment stations the responsibility of meeting those demands. The staffs of those stations are fully aware of the obligation imposed and, with the continuance of your support, face this challenge with confidence.

In closing, I should like to pay tribute to the late Dr. Wilmon Newell who so ably directed the destinies of the agricultural experiment stations for the past twenty-four years. Through his untiring efforts and far-sighted vision the station system has grown in size and scope and has gained in prestige until at the time of his death it held an enviable position and high rank among the country's agricultural research institutions. He gathered about him a research staff whose achievements have been of immeasurable benefit in the many fields of Florida's agriculture and have gained for themselves and the experiment station national and international recognition.

The State experiment stations of today, their organization and present high standards are in large part due to his industry, marked administrative ability and inspirational leadership. These stations and their accomplishments will stand as monuments to his wisdom and signal contributions to Florida's agriculture.

12 Million Farmers Without Social Security Protection...

By RICHARD H. LYLE, Regional Director, SS Board, Atlanta, Ga.,
At Meeting Florida State Horticultural Society

Twelve million farmers are without protection against insecurity caused by illness, accident, disability and old age. The age-old request for protection against some of life's common hazards became a living reality for many with the passage of the Social Security Act in 1935, but not for farm hands and operators.

Failure to include farm owners and agricultural labor under old-age and survivors insurance imposes a severe handicap on agricultural regions as compared with industrial regions—a handicap similar to that caused by tariffs and inequitable freight rates. The farmer pays a proportionate part of the cost of the Old-Age and Survivors Insurance system but does not receive its benefits—a species of taxation without representation. The system is financed by a payroll tax on covered occupations, paid by employers and employees, one percent on each at present and graduated to three percent in 1949. This payroll tax is passed on to the farmers through the price charged for agricultural implements, goods and commodities, as well as for services sold. Employers pass it on through higher wage rates in manufacturing states and the payroll tax is thus spread out through the whole economy. This inequality is demonstrated by the fact that in 1942, 11 states which included 55 percent of the country's population reported 70 percent of the taxable wages for Old-Age and Survivors Insurance. The other 37 states, with 45 percent

(Continued on next page)

12 MILLION FARMERS WITHOUT SOCIAL SECURITY PROTECTION

(Continued from preceding page)

of the population, accounted for only 30 percent of the taxable wages reported. This is largely true because of the non-coverage of some five million farm operators and four million farm workers, domestic servants, and workers in small, self-operated businesses.

The farmer also pays a part of the cost of old-age and survivors insurance by paying the tax while working in covered employment but in most cases loses all right to benefits when returning to agriculture, his normal employment. Wage records of the Bureau of Old-Age and Survivors Insurance reveal that about fifteen million persons who had some wage credits had not accumulated the necessary amount to be entitled to the insurance because of the short duration of employment. A high percentage of those who do not qualify for benefits are from agriculture. It is estimated that a potential benefit right to approximately $65,000,000 annually would be built up for our six states in the Southeast if the present excluded groups, composed mainly of farm operators and workers, were brought within the present Old-Age and Survivors Insurance program. From May 1943 through February 29, 1944, 26,622 claimants made inquiry at our field offices in Florida, Georgia, Alabama, Mississippi, Tennessee, South Carolina. 7,225, or more than 25 percent, received no benefits because they had not worked long enough to be insured.

The 1940 population of the continental United States was 131,699,255. Our six southeastern States of Alabama, Florida, Georgia, Mississippi, South Carolina, and Tennessee had a population of 14,853,559—or 11.3 percent of the nation's total. The total number of covered workers for the nation under Old-Age and Survivors Insurance was 42,000,000—or 8 percent of the nation's total. The total amount of Old-Age and Survivors Insurance benefits paid in 1942 in this region was $768,600—or 6 percent of the nation's total of $12,575,000.

There are more aged people and more children in the South than elsewhere in the nation, and social insurance needs of the area are greater in proportion to the population, rather than less. Exclusion of farm workers from Old-Age and Survivors Insurance compels a greater dependency of agricultural areas upon public aid programs and at the same time increases the general tax burden, local, state, and federal. One of the primary purposes of Old-Age and Survivors Insurance is to relieve this situation by enabling all workers to pay the comparatively small premium over the years and attain an insurance status. Unless this is done, our people in agricultural regions will be compelled to fall back on the public assistance programs—old-age assistance, aid to dependent children, and aid to the needy blind.

The Public Assistance programs are causing a high levy upon the tax resources of our states, even in a period when employment is at the highest level in our history. In a recent month, the six states of this region had 223,469 persons on the Old-Age Assistance rolls, drawing approximately $1,506,335 a month. Florida is now spending approximately $4,500,000 annually on its Public Assistance Program which includes Old-Age Assistance, Aid to Dependent Children, and Aid to the Needy Blind.

How

MULTIWALL-PACKAGED FERTILIZER SAVES YOU

Money, Time and Manpower!

YOU get every ounce you pay for when your fertilizer comes to you in sift-proof MULTIWALL Paper Bags. One look will convince you that not a particle can work its way through the 4 or 5 "walls" of tough kraft paper in these custom-built bags. Full strength assured, too, as special sheets prevent loss of fertilizer values in new, high analysis mixes!

Filled bags may be left exposed in field or grove until ready for use. Time saved in extra truck trips, too.

Easy-to-handle MULTIWALLS are a big help in the present labor shortage. Compact 100 lb. MULTIWALLS are far easier to lift, stack and store than back-breaking 200 lb. fabric bags. Fertilizer in MULTIWALL Bags can be safely stored with feed or other commodities.

Send for your free folder that tells about heavy-duty MULTIWALL Bags, and check *all* the advantages of MULTIWALL-packaging for your fertilizer.

St. Regis MULTIWALL PAPER BAGS

ST. REGIS PAPER COMPANY
O'Sullivan Building
Baltimore 2, Maryland

FLORIDA REPRESENTATIVES:
W. M. Palmer, Ocala, Phone—261
T. F. Sheridan, 2655 Dellwood Ave., Jacksonville, Phone—7-7173

TRENDS IN THE PROCESSING OF FLORIDA CITRUS FRUITS AND THEIR INFLUENCE ON RETURNS TO PRODUCERS

(Continued from page 7)

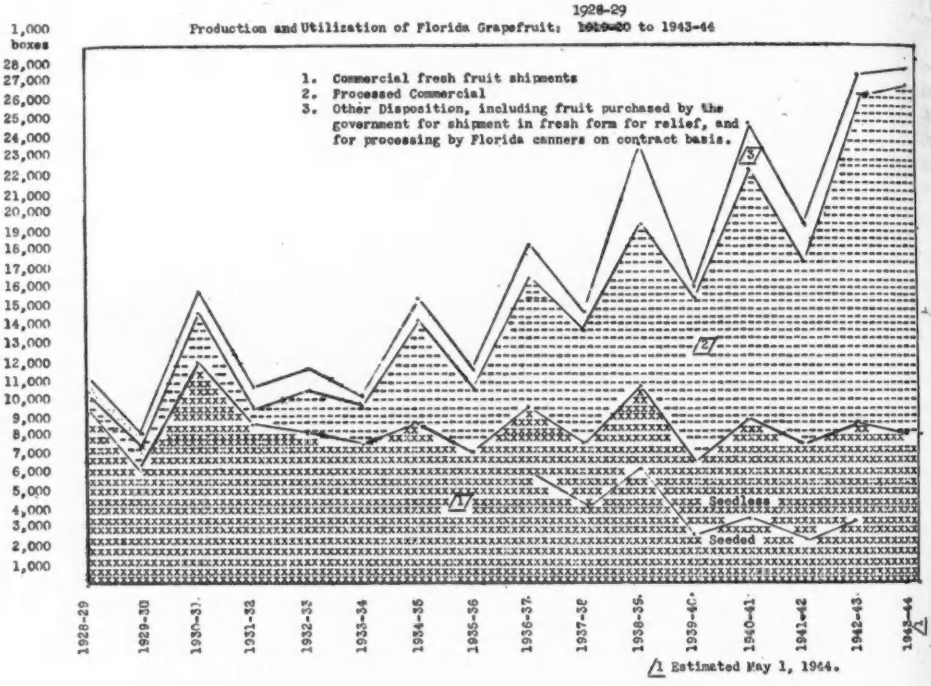
In some instances the operators feel that the fresh fruit price levels in the terminal markets may improve prior to the time the fruit arrives at the market for sale. While such improvement often does not materialize, they consider the level of prices being paid by canners such as to warrant taking the chance involved.

In our opinion not more than 10 percent of the grapefruit shipped in fresh form is utilized for juice. The availability of canned grapefruit juice at prices lower than the cost of the fresh grapefruit undoubtedly affects the volume of fruit than can be disposed of in fresh fruit channels, particularly fruit purchased for **juice purposes.** Likewise, canned grapefruit sections probably affect to some degree the volume of grapefruit sold in fresh form which is **not used for juice purposes.** The housewife isn't likely to buy fresh grapefruit for juice purposes and canned grapefruit juice at the same time. Therefore, there is certainly competition to the extent that the grocer pushes the sale of one item and not the other. We believe, however, that the influence of canned grapefruit juice and sections on the price of grapefruit sold in fresh form or the volume that can be marketed in fresh form is neglible. For example, last year sections were not available to civilians and the volume of grapefruit marketed in fresh form did not increase appreciably. Fresh shipments this season when sections again will not be available for civilian consumption, are expected to be even lower than shipments last year.

In our opinion, the price paid by canners for grapefruit has much more influence on the price that growers can obtain in fresh fruit outlets for grapefruit than low retail prices for grapefruit juice. Of course, prices paid by canners are generally reflected in the retail price of juice. If canners could, in some way, substantially reduce the price of grapefruit juice without reducing prices paid to growers for grapefruit, we are of the opinion that prices for fresh fruit would not be appreciably affected by the lower priced juice. We think this is true for the reason that most of the fruit shipped in fresh form is not used for juice purposes. In further support of this contention, we submit that if all canning operations were discontinued for an entire season, the volume of grapefruit shipped in fresh form would not increase appreciably — certainly not to the extent of absorbing more than a fraction of the quantity of fruit that would normally be canned. We believe canned grapefruit juice offers much more competition to fresh oranges and canned orange juice than to fresh grapefruit.

In considering the volume of grapefruit products sold in competition with fresh grapefruit it must be borne in mind that a large volume of these products is disposed of in the summer months when fresh Florida grapefruit is not available. In 1940-41, the only year for which we have the figures, 46.6 percent of the pack of grapefruit juice and 46.4 percent of the grapefruit sections were shipped by wholesale distributors to retailers during the period June-October inclusive. We may therefore assume that approximately one-half of the volume of these products is consumed when fresh fruit is not available.

To summarize, since canners use two-thirds of the grapefruit crop, the prices paid by canners appear to operate somewhat as a ceiling but not as a floor on returns that may be received from fruit shipped in fresh form. An exception to this is fruit of exceptionally high quality such as certain Indian River packs. The volume of fresh fruit marketed does not seem to be appreciably affected by the volume canned. The price of fresh grapefruit is not appreciably affected by the price of grapefruit juice or sections.


1928-29
Production and Utilization of Florida Grapefruit: 1919-20 to 1943-44
1,000 boxes
1. Commercial fresh fruit shipments
2. Processed Commercial
3. Other Disposition, including fruit purchased by the government for shipment in fresh form for relief, and for processing by Florida canners on contract basis.
Seedless
Seeded
1/ Estimated May 1, 1944.

Oranges

In the case of oranges the prices paid by canners in the past for fruit for processing appear to have had little, if any, effect on the general price level in fresh fruit markets. Since a very large percentage of the crop is shipped in fresh form, the price that can be obtained in fresh fruit channels largely determines the price that canners must pay for oranges, particularly for fruit that is suitable for shipment in fresh form and not restricted from shipment out of the State. Under the marketing agreement program the grade and size regulations are sometimes made quite stringent in order to improve prices in the fresh fruit markets. There have been instances where this resulted in the volume of restricted sizes and grades being greater than the demand by canners. This often results in the price paid by canners getting considerably out of line with prices in fresh fruit channels. In these instances, when the regulations are more liberal the canning price generally adjusts itself more in line with the fresh fruit price.

Since a large percentage of Florida oranges shipped in fresh form are used for juice by consumers, the pack of canned orange juice undoubtedly has some effect on the **prices** and **volume** of oranges sold in fresh form; but due to the relatively small volume canned we think the effect is negligible. We do believe, however, that as a general principle, canned orange juice is much more competitive with fresh oranges than canned grapefruit juice is with fresh grapefruit. As the volume of oranges processed increases the effect on our fresh orange prices and volume will become more pronounced.

The question of whether canned citrus products affect volume and prices of fresh citrus brings to mind the question of whether the canned products are a replacement of fresh fruit or whether they provide new outlets. We think in the case of Florida that canned products largely represent new outlets, but some volume replaces fresh fruit. Certainly the juices and segments

marketed in the months when fresh Florida fruit is not available represent new outlets. During the period when fresh fruit is available we think new outlets can be claimed for a substantial portion of the products. For example, prior to the time we entered the war, a substantial volume of grapefruit juice was packed in small cans and sold at filling stations and other places where soft drinks are dispensed. In this case the juice was used as a beverage and could not possibly be considered as a replacement of fresh fruit. Since canned citrus products are non-perishable, as perishability is generally understood, the canned products are more suitable for wider distribution at lower cost to consumers and in our opinion the product finds its way into more markets in greater volume than would fresh fruit if the canned products were not available.

In the case of grapefruit, we have previously expressed the opinion that not more than ten percent of our fruit shipped in fresh form is used for juice purposes. If this is true, we think that the grapefruit juice marketed largely represents new outlets rather than replacement. In most instances if the housewife could not obtain grapefruit juice she would look for orange, tomato, pineapple or some other canned juice rather than fresh grapefruit.

Since most of our oranges sold in fresh form are used for juice purposes, we think it can well be argued that a large volume of the canned orange juice market during the period fresh oranges are marketed replaces fresh oranges. Since grapefruit juice is competitive with fresh oranges and canned orange juice, we believe that some of the volume of this product replaces fresh oranges. We feel, however, that all marketable oranges would have been marketed this year if none had been sent to processors. Prices undoubtedly would have been much lower. If production and national income next year are the same as for this year and we should send one-half of the crop to processors for canned orange juice, which we will assume would be fully acceptable to consumers, we would have to definitely say that a substantial portion of the juice marketed when fresh oranges are marketed would replace fresh oranges. We don't think it would be entirely so. There are no doubt many consumers who are now using canned grapefruit juice or some other canned juice who would use acceptable canned orange juice, if available, but who will not buy fresh oranges and extract the juice. These consumers are not now using canned orange juice because the flavor does not meet their ideas of how canned orange juice should taste. They no doubt would use it if the flavor more closely approached fresh orange juice. There appears to be a much better basis for an argument in the case of oranges than in the case of grapefruit that canned juice replaces fresh fruit.

This matter of replacement may be a departure from the question which was raised, but we think it is pertinent. At a recent meeting of the National Citrus Committee of the American Farm Bureau Federation, consisting of growers from each of the citrus producing areas, it was voted to request the Bureau of Agricultural Economics to make a study of processed fruit "to determine as to whether it is a replacement or an increased profitable outlet for the grower."

Third question: During the post-war period when the government is no longer a purchaser or at least a small factor, will the returns to producers for their entire citrus crop be greater or less because of canning outlets?

Grapefruit

We have previously stated that we market most of our oranges in fresh form because canned orange juice does not approach closely enough the fresh orange juice. If this is true, one might logically assume that if a process had not been developed by which canned grapefruit juice was made to so closely approach the fresh juice we would be marketing most of our grapefruit in fresh fruit channels; but this would not be true. If the production of grapefruit had continued as it has, and a process for producing acceptable canned grapefruit juice had not been developed, we feel certain, as we stated in answering the first question, that we would not be marketing all of the crop, or even a large part of it, in fresh fruit channels. Moreover, prices for the quantity that could be disposed of would be ruinous.

We must accept the fact however that canned grapefruit juice does meet with greater consumer acceptance. We have already developed the fact that about one-half of the total volume of grapefruit juice and other grapefruit products is marketed during a period when there is little or no fresh Florida grapefruit on the market, thereby giving us a much longer marketing season. Therefore, in the case of grapefruit, we feel that regardless of whether the general price level is high or low, returns to growers in any given year for their entire crop will be greater because of canning outlets.

Oranges

We have previously expressed the belief that the amount of processed orange juice (in some form) will continue to increase. To the extent that it increases, we will be able to market more of our crop during the summer months when fresh fruit from Florida is not available, thereby giving us a much longer marketing period. In this event, as in the case of grapefruit, we believe that total returns to growers for their orange crops will be greater by reason of the canning outlets. We have earlier expressed the opinion that the entire crop of oranges this year could have been marketed in fresh form, but that the average price would have been somewhat lower. If this be true, it answers in the affirmative the question as to whether growers receive greater returns by reason of canning outlets than would be received in the absence of such outlets.

It is generally agreed that without reducing returns to growers a product can be delivered to the consumer in processed form at a lower cost than it can be delivered in fresh form. While the canning and fresh outlets are competitive we think the net return to the grower is not reduced by diverting a larger percentage of the production to canning plants, particularly if there are enough canning plants operating to insure real competitive bidding for the fruit. The principal reason we divert more fruit to canners, except fruit that is not suitable for fresh shipment, is because (1) we can-

(Continued on page 18)

TABLE 2—Packs of Grapefruit Sections, Orange and Grapefruit Salad, Orange Juice, Grapefruit Juice, and Blended Juice 1936-37 to 1943-44

Year	Canned Grfrt. Sections	Canned Org. Juice	Canned Blended Juice	Canned Grfrt. Juice	Canned Citrus Salad
	Cases 24 No. 2 Cans				
1936-37	4,058,000	498,000	272,000	3,918,000	88,000
1937-38	3,419,000	806,000	547,000	3,370,000	85,000
1938-39	4,106,000	926,000	699,000	6,190,000	131,000
1939-40	4,134,000	2,851,000	1,403,000	4,682,000	85,000
1940-41	3,140,000	3,078,000	2,537,000	10,647,000	330,000
1941-42	4,611,000	3,466,000	2,305,000	6,180,000	274,000
1942-43	888,000	2,429,000	3,676,000	15,193,000	None
1943-44/1	950,000	5,000,000	5,300,000	15,500,000	None

/1 Estimated

ADVERTISEMENT—LYONS FERTILIZER COMPANY

The LYONIZER

Department

COMPILED BY THE LYONS FERTILIZER CO.

Reports of Lyons Field Men . . .

HILLSBOROUGH & PINELLAS COUNTIES
C. S. (Charlie) Little

Citrus growers in this section as a general rule are in very fine condition. We still have some localities that are badly in need of rain and in these sections there has been very little new growth. Quite a number of groves that suffered from drought prior to this time are showing the effects of recent rains and are putting on a nice growth and in many cases there is an accompanying bloom. Those growers that do not have irrigation are using the harrow to good advantage in conserving the soil moisture. Most growers have completed their oil spray but it looks as if a number of groves will have to be sprayed the second time to bring the scale insects under control.

SOUTHWEST FLORIDA
F. W. (Felton) Scott

We have had ample rains during the past month and most groves have shown a very fine repsonse. We are getting a heavy summer bloom on a large number of groves and if it sets should be good on late varieties. There is a heavy scale infestation and growers have been very busy in an effort to bring this pest under control. Vegetable growers in this territory have been very busy getting their plans under way for the fall planting. It appears that the acreage planted will depend to a large extent on the growers ability to get help and we have heard some growers state that their help situation was so bad that they would have to curtail their plantings.

POLK COUNTY
J. M. (Jim) Sample

Growers in this county have had a most successful season and are entitled to a little rest and recreation. That is just what a lot of them are doing at this time, and rightly so, as they have their properties in excellent condition, while a large number of them have finished with their oil spray. We are getting a considerable summer bloom but it is hard to tell just what will happen to this bloom as just a little dry weather at this time would send it all to the ground. There has been lots of talk about the crop for the coming season and in this territory we predict that we will have about the same tonnage as produced during the past season.

NORTH CENTRAL FLORIDA
V. E. (Val) Bourland

Dry weather in some localities during June played havoc with young fruit on the trees and while it first appeared that our tonnage would be larger this year than that produced during the past season it is now safe to say that we will not have more fruit this year. There is some bloom putting in an appearance now but this is quite a period of time beyond normal blooming season and we do not have a great deal of confidence in prospects from this bloom. Vegetable growers in the Winter Garden section are planning on a normal acreage for the fall season with about the same varieties being planted as in former years.

WEST CENTRAL FLORIDA
E. A. (Mac) McCartney

Growers are taking the advantage of any extra labor that they are able to get during these summer months to do the many odd jobs that have be done such as pruning, hoeing young trees, etc. Our prospects for the coming season are very bright. We have a nice crop of fruit that is growing fine and it appears that our quality will be good. Indications are that we might have a slightly increased acreage of vegetables during the coming fall season. The various crops planted in this territory will continue to be planted wtih strawberries probably having the largest acreage.

SOUTH CENTRAL FLORIDA
H. C. (Cullie) Collins

We had a June bloom around Arcadia that was a dandy and it has set and is growing off in very fine shape. We are very proud of this bloom because many groves had a very light crop prior to that time. We are practically through with our oil spray and since we had some ideal weather for a considerable period of time it appears that we have had an excellent kill. Growers are now busy with keeping a thorough check on their rust mites and other pests. The fall planting season is rapidly approaching and growers are making plans for about the same acreage as planted last year.

JEFF BRITT APPOINTED AS FIELD REPRESENTATIVE IN POLK COUNTY

We are pleased to announce that Mr. J. B. Britt of Winter Haven, who has been with us for a number of years, has been appointed as a field representative in Polk County. Jeff has been around groves for a good many years and we feel that he will give to his customers a real service. We want you to feel free to call on Jeff at any time that he can be of service.

Our Field Representatives Are Trained By Schooling And Experience To Know The Answers To Production Problems Do not hesitate to call on them for any service

ADVERTISEMENT—LYONS FERTILIZER COMPANY

Uncle Bill probably hasn't many friends among the barbers of Florida, but he's a pretty level headed old bird, and over a period of time he's given us a lot of sound advice, so we've decided to pass on to our friends a few bits of his counsel and philosophy each month for a while.

Seems like about now would be a mighty good time to sort of plan for fall and winter vegetable crops in Florida. 'Spect we could stand a surplus of such crops right now a heap better than most any other time in history. Sure could do better with a surplus than a shortage — and so could our soldier boys.

They's a lot of ways us farmer fellows can kind of help our money situation now if we'll just git off the seat of our pants. Buyin' War Bonds is a mighty good way. Likewise building up the soil on our groves and vegetable plots is liable to pay off big when things git a little tougher — and they sure will do that one of these days. Keeping our machinery in good shape ain't goin' to hurt none either. Maybe some of us could even study something about new crops or new strains without hurtin' us any.

Fellar told us that truck crops from Florida brought in 56 million dollars in 1942, and 92 millions in 1943. Said 'twas about 30 percent of all our farm income. And that ain't hay in anybody's language. All of this was produced on just 250,000 acres too — which makes Florida farmers pretty lucky folks — if you ask me.

Florida's a mighty fine state. What with our crops of Yankee visitors, our cattle, our phosphate, and our truck farms, they's a heap of money made down here, but when you git right down to figgerin' close most anybody'll admit that the citrus growin' is the biggest thing in all Florida. And it ain't altogether the fact that this business brings in such a heap of money . . . just think what we're doin' for our fightin' men and for the starvin' people that devil Hitler has robbed all these years. Yep, it's a mighty big thing, this Florida citrus business.

Statistics is a mighty interestin' subject. Fer instance corporations which is producin' most of the agricultural commodities of the nation has jumped their sales up 148 percent, and while doin' it salaries and wages in these same outfits has increased a 172 percent. Taxes has climbed 225 percent and profits has sunk 14 percent — just in case you're interested in statistics.

Some folks is still worryin' about what's going to happen to the citrus industry just like they was 25 or 30 years ago. Still worryin' 'cause folks is producing more and more fine citrus each year. It turned out we didn't have much to worry about 25 or 30 years ago and I 'spect we got less to worry about now. All these here new things they call by-products is going to keep a pretty good market for our fruit, and there'll be a lot of millions of folks who didn't eat grapefruit or oranges before the war who are goin' to git it from now on. They do say research and advertisin', too, is mighty good things to use when you got a lot of stuff to sell.

See you all next month. UNCLE BILL.

TRENDS IN THE PROCESSING OF FLORIDA CITRUS FRUITS AND THEIR INFLUENCE ON RETURNS TO PRODUCERS

(Continued from page 15)

not market it all in fresh fruit channels at a reasonable return to growers, (2) canners are willing to pay competitive prices, or (3) because the public prefers it in cans. We have no conclusive evidence that returns to growers are lower by reason of the canning outlets, and the one fact that the canning outlet gives us a much longer marketing period, we believe, is conclusive that returns to growers are greater by reason of such outlet.

General

We feel that because of the large increase in production in prospect for oranges and grapefruit, leaders in the Florida citrus industry and in all other producing areas should develop all possible outlets and find ways and means of reducing production and handling costs to a minimum. We think it is necessary to develop new markets for both fresh and processed fruit. In our opinion, it is a more sound marketing policy to develop both outlets rather than be dependent upon only one.

There are approximately 50 canners operating in Florida. Less than one-half of the volume of fruit diverted to canning plants is handled by grower-canners. The percentage handled by this type of canner is increasing each year. Many progressive growers are becoming more and more convinced that in order to survive the lean years which may reasonably be expected in the future, it is going to be necessary for them to have their fruit canned in their own efficiently operated canning plants. The trend is definitely in that direction. Most growers with whom we have discussed the matter feel that the influence of grower-owned canning plants in the canning deal during the past 2 or 3 years has effected greater stability in prices received for canning fruit. They feel that the presence of more grower-owned canneries will lend even greater stability in the years to come.

We think the questions which have been raised by our neighbors in California are very interesting and appropriate. During these days when demand is greatly stimulated by record national income levels, there is great danger of growers in all citrus producing areas being lulled into a false feeling of security for the future. That would be a grave mistake. On the contrary, we feel that much thought and study should be given to operations in the post-war period and the questions raised are certainly thought-provoking and deserve the consideration of everyone interested in the citrus industry. It seems like only yesterday we were up against a stone wall in disposing of our entire crops, and were selling one box of fruit to the government at a very low price with the agreement that for each box purchased we would divert one box to cattle feed, fertilizer, or some outlet other than fresh fruit or processing channels. During the past five or six years we have leaned heavily on the government to assist us in disposing of citrus fruit of all types. Such assistance cannot be considered as anything more than a crutch to cushion the shock of and assist us through lean years of relatively high production and low levels of national income. That crutch may not be available in the future. We certainly do not want to become so accustomed to it that we cannot do without it.

As we get about the State we see many new groves being set. We are devoting much time to ways and means of improving quality and increasing production, as we should. But, how much time are we devoting to developing new markets for the increased production? Should this not be our No. 1 objective? The marketing of the increasingly larger crops of all varieties of citrus fruits in the future at reasonable returns to growers is a real challenge to the best minds in the industry in all producing areas. Let's meet that challenge. We **must** meet it if we are to avoid the heartaches and disappointments experienced in the past by our fellow growers in some of the other fruit industries.

CLASSIFIED Advertisements

The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion. Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 50 cents.

"ATTENTION!" Wanted information as to where I can find an entire tree or sport branch producing Naveled Grapefruit; fruits showing navel. Also persons having any type of VARIEGATED citrus trees. Reasonable prices will be paid for budwood of such freak plants. Will purchase from Nurserymen any variegated seedlings from seedbeds. Wanted particularly information as to where can be found old Seedlings producing seedless fruits of very early maturity. Royal Purple Citrus Research Nursery, Orlando, Florida.

WANTED — Washer for citrus fruit. Also complete equipment for small packing house. Owen Godwin, Sebring, Florida.

USED MACHINERY WANTED: — Box and Crate Nailing Machines, Other Boxmaking Equipment, Roller Conveyors, Fruit Processing Machinery. J. WOLFSON, 304 Wood Street, Pittsburgh, Penn.

Florida Agricultural Laboratory — Babson Park, Fla. Soil analyses and consultation on problems and programs. Consultant in Agricultural Processing and By-Products.

CITRUS TREES—Best quality usual varieties on sour orange or rough lemon stock. Robt. P. Thornton, c/o Clay Hill Nurseries Co., Box 2880, Tampa, Florida.

The Citrus Industry magazine has demonstrated to agricultural advertisers that it covers the citrus field

Presentation of Set Of Proceedings To Citrus Exp. Station

By Miss Clarissa Rolfs, Gainesville,

At Meeting Floridt State Horticultural Soc.

I was brought up on the tradition that one always attended the State Horticultural Society meetings. It is something the Rolfs family did every year, like Christmas came along. I am sure that no one in Florida ever got more enjoyment out of the Horticultural meetings than my parents. When we went to Brazil in 1921, the proceedings were even more weighty than they are now. I think my father presented over 30 papers and mother 7 or 8. She was the first lady elected to Honorary membership. When we were returning, (my father and I) from Brazil in 1940, we left all of his library in Brazil except the Florida stuff. We felt this should be brought back and left here in some institution in the state. Recently my sister and I wanted to place this material, so we consulted Secretary Floyd and President O'Byrne and they suggested we give it to the Citrus Experiment Station in Lake Alfred. I did not realize at that time that complete collections of the Proceedings are quite as rare as Mr. Floyd and Mr. O'Byrne stated. At any rate, I am very happy to place it in the library of the Citrus Experiment Station. In addition to the complete collection of the Proceedings we are giving the rest of the Florida material. This is all quite old material, some of it dating back to 1880. It includes Bulletins 1, 2, 3, 4 and 5. It has not been sorted at all. I did not feel competent to reject any of it, so Dr. Camp will have that job wished on him. You people of the state of Florida do not appreciate the opportunity you have in being able to attend such meetings as this every year. Father and I were for 17 years in Brazil and I think the greatest privation he felt down there was the fact that there was so little scientific activity and no gatherings of this sort. Once in a while a scientist would come along and what a treat it was to my father. You would be surprised if you knew how very useful the Proceedings of the Florida State Horticultural Society were in Brazil. I predict that after the war the citrus industry of Florida will find quite active competition from Brazil for the Canadian market and you can have the consolation of knowing that the little set that went to Brazil and back had something to do with helping build up the citrus industry in Brazil. We hope that others will follow suit, and that this institution will have a large library of older and newer horticultural publications. I thing this it what Secretary Floyd and President O'Byrne had in mind, no doubt, in making the suggestion.

Proper Timing
Thorough Coverage
and the use of
QUALITY PRODUCTS

. . . These things alone should produce the desired results in your summer spray program.

NACO representatives have the practical knowledge and long experience that enables them to assist you in working out your fertilizer and insecticide spraying program.

NACO BRAND

If you use oil
THIS SUMMER
be sure to use
VOLCK
"ORTHO" Products

NACO FERTILIZER COMPANY JACKSONVILLE 1 . . . . FLORIDA

PRODUCE Maximum Crops of Finest Quality with Lyons Fertilizers

PUBLIC LIBRARY

AGENTS CARRYING STOCK

Arnold Feed & Seed Store, Winter Garden
Citrus Service & Supply Co., Tavares
Douglas Hardware Co., Dunedin
E. C. Edge, Dania
John Giddens, Avon Park
A. G. McCauley, St. Petersburg
Guignard Maxcy, Sebring
Noling & Church, Howey-in-the-Hills
John W. Parker, Arcadia
Paramount Grove Service, Lakeland
Plant City Seed Co., Plant City
Ruskin Tomato Growers, Inc., Ruskin
Arthur Schrader, San Antonio
J. C. Smith & Son, Lakeland
J. C. Smith & Son, Palmetto
D. T. Thompson, Webster
Unity Farms, Inc., Pahokee
G. E. Wetherington, Turkey Creek

FIELD REPRESENTATIVES

J. H. Rickborn, Sales Manager
Lakeland
V. E. Bourland, Winter Garden
H. C. Collins, 310 S. 7th Ave., Wauchula
Chas. S. Little, Rt. 5, Box 1031, Tampa
E. A. McCartney, Temple Terrace,
Tampa
J. M. Sample, Box 113, Lake Hamilton
Felton W. Scott, Bradenton
Norman Tuckett, Mount Dora
J. B. Britt, Winter Haven

The time will soon be here when Quality Fruit as well as Maximum Production is going to be a greater profit factor in our citrus growing program. The reputation of our Fertilizers for producing Maximum Crops of Finest Quality is based upon proven experience . . . Now is the time to build for the day when Quality will bring its biggest premium.

LYONS FERTILIZER CO.

Tampa - - - Florida

LYONIZE YOUR CROPS